

# Work Order ID 48485

June 26, 2009 12:44:55 PM



Page 1

Item ID: D2003-017

Accept



Setup Start



Revision ID: ~~B-U/R~~ *See ATTACHED W/O*

Stop



Item Name: Tube Assembly

Start Date: 15/07/2009 Start Qty: 6.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 6.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D2003

Rev U/R

100

0.00



Small Fab

Small Fab

## Memo

1- Cut: 17.0" long as per Dwg D2003  
Material: M2650-6 Heat sleeve  
2- Form tube as per template D2003-017  
3- Assemble as per Dwg D2003

0.00

*M-L 09/07/24*

*(6x)*

110

QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

## Memo

0.00

*=> 509/01/24*

*(6)*

*f*

# Work Order ID 48485

June 26, 2009 12:44:56 PM



Page 2

Item ID: D2003-017  
Revision ID: U/R  
Item Name: Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 6.00  
Required Date: 03/08/2009 Req'd Qty: 6.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:  
QC:

Date:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

120



Packaging

Packaging

Identify as per dwg & Stock Location: 192

0.00

Memo

0.00

09/7/24 (G)

130



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

09/07/28 J

MF 09-07-28

# Picklist Print

June 26, 2009 12:44:55 PM

Work Order ID: 48485

Parent Item: D2003-017RevU/R

Parent Item Name: Tube Assembly






Comments:


Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 6.00

Required Qty: 6.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M6061T6T0.375W.035 		Purchased	No			100	f	0.0000	8.5528			
6061-T6 RD Tube .375 x.035W												
M2650-6 		Purchased	No			100	f	0.0000	8.9684			
Firesleeve-crkl .375IDia												
*-D2182-045RevC 		Manufactured	No			100	Each	0.0000	6.0000			
Heat Shrink 4.5" Long												
AN818-6D 		Purchased	No			100	Each	0.0000	12.0000			
Nut												
MS20819-6D 		Purchased	No			100	Each	0.0000	12.0000			
Sleeve												

 M104913 m-l 09/07/24

 M112195 m-l 09/07/24

 B21864B m-l 09/07/24

 M112082 m-l 09/07/24

 M112082 m-l 09/07/24

Date: Thursday, 11/06/2009 11:54:36 AM  
 User: Julie Dawson

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : TUBE ASSEMBLY
<b>Job Number</b> : 48485	
<b>Estimate Number</b> : 11917	
<b>P.O. Number</b> :	<b>Part Number</b> : D2003017
<b>This Issue</b> : 11/06/2009 <b>S.O. No.</b> :	<b>Drawing Number</b> : D2003 UNDER REVIEW <i>OK</i>
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : / / <b>Type</b> : SMALL /MED FAB	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 37909	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 19/06/2009 <b>Qty:</b> 6 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <i>J. Dawson</i>	
<b>Comment</b> : Est B00.01.12 Re-format EC	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
----------------	------------------------------	----------------------

1.0	M6061T6T0375W035	6061-T6 RD Tube .375 x.035W
-----	------------------	-----------------------------

**Comment:** Qty.: 1.4219 f(s)/Unit Total : 8.5315 f(s)

Cut as per template D2003-017 (16.25" long)

Material: 3/8" E x 0.035" wall, 6061-T6 tubing

Batch: ~~M110113~~

Cut: 17.0" long as per Dwg D2003

Material: M2650-6 Heat sleeve

Batch: \_\_\_\_\_

*m-h 09/06/24*  
*M104913*

*(PW)*

2.0	M26506	Firesleeve-crkl .375IDia
-----	--------	--------------------------

**Comment:** Qty.: 1.4200 f(s)/Unit Total : 8.5200 f(s)

Firesleeve-crkl .375IDia

*M112195 m-h 09/06/24*

3.0	D2182045	Heat Shrink 4.5" Long
-----	----------	-----------------------

**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2182-045 Heat shrink

*m-h 09/06/24*  
*B21864 B*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2003-017 PAR #: N/A Fault Category: Sm fab NCR: (Yes) No DQA: AS Date: 09-07-29  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: AS Date: 05-05-20

NCR: <u>48485</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09/06/29	1.0	3/8 x 0.325 304 SS. was cut & pulled for 4 parts. 4 parts scrap & 2 sections of straight material remain. Did not double check & pulled mat'l R.C. L.O.A.	AS/11/2	Scrap & destroy Qty 4 Re-ident. by & stock 2 mm 11. at 16" /mg. Ensure to double check material prior to use.	M.H. 09/06/29 M.H. 09/06/29	S 09/06/29	AS/11/2	09/06/29

NOTE: Date & initial all entries

Date: Thursday, 11/06/2009 11:54:36 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUBE ASSEMBLY

Job Number: 48485

Part Number: D2003017

Job Number:



Seq. #:

Machine Or Operation:

Description :

4.0

MS208196D

Sleeve



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Sleeve

Pick:

Qty Part Number Description Batch  
2 MS20819-6D Sleeve

M 112082 m-l 09/06/24

5.0

AN8186D

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Nut

Pick:

Qty Part Number Description Batch  
2 AN818-6D Nut

M 112082 m-l 09/06/24

6.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Form tube as per template D2003-017

Assemble as per Dwg D2003

m-l 09/07/24

(6X)

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

09/07/24 (6)

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

9.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion ✓



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DESIGN <i>JE</i>	DRAWN BY <i>JP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>JE</i>	APPROVED <i>JP</i>	DRAWING NO. D2003	REV. 8 SHEET 1 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	
A	90.04.09	NEW ISSUE	
B	99.06.08	UPDATE PER TEMPLATES; ADD P/N'S; 0.025 TUBING NOW 0.035 (TSR1049)	

RELEASED  
49.06.08 KE

UNDER REVIEW

06.08.21 CB

some flat  
lengths wrong

P/N	TEMPLATE	HEATSLEEVE LENGTH <sup>1</sup>	CUT LENGTH OF TUBE <sup>2</sup>	MS20819-8J SLEEVE	AN818-8J NUT	MS20819-8D SLEEVE	AN818-8D NUT	MS20819-6D SLEEVE	AN818-6D NUT	DESC.	MATERIAL <sup>4/5/7</sup>	VENDOR OR SPEC
D2003-001	T2003-001	5.2	6.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-003	T2003-003	7.3	8.12					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-005	T2003-005	9.8	10.62					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-007	T2003-007	20.0	19.63					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-009	T2003-009	12.38	12.44					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-011	T2003-011	33.31	32.38					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-013	T2003-013	12.7	13.54					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-015	T2003-015	17.2	18.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-017	T2003-017	17.0	16.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-019	T2003-019	9.8	10.62			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-021	T2003-021	N/A	2.25			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-023	T2003-023	4.5	5.33			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-025	T2003-025	9.8	10.60			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-027	T2003-027	7.25	7.38			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-029	T2003-029	17.2	18.00			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-700/6
D2003-031	T2003-031	14.6	15.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-033	T2003-033	29.75	29.62	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-035	T2003-035	24.7	27.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-037	T2003-037	24.81	23.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-039	T2003-039	34.0	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-041	T2003-041	6.0	5.88	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-043	T2003-043	11.7	10.75	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-045	T2003-045	3.50	2.44	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-047	T2003-047	5.56	5.56	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-049	T2003-049	33.2	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-077	T2003-077	N/A	6.25					1	1	JET	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-101	T2003-101	13.25	13.13					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-103	T2003-103	12.38	12.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-105	T2003-105	10.75	10.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-107	T2003-107	12.75	12.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-600/6
D2003-109	T2003-109	8.25	8.125			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-600/6
D2003-111	T2003-111	4.75	4.625			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	WWW-T-600/6
D2003-116	T2003-116	4.0								HEATSLEEVE	M2650-20 CRINKLE-SOFT	STRATOFLEX
D2003-120	T2003-120	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-14	T2003-14	4.0								HEATSLEEVE	M2650-14 CRINKLE-SOFT	STRATOFLEX
D2003-16	T2003-16	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-205	T2003-205	9.75	9.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6
D2003-207	T2003-207	3.75	3.75					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	WWW-T-700/6

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WITHOUT NOTICE

WORK ORDER

NO. 1184505





DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2003	REV. B SHEET 2 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	

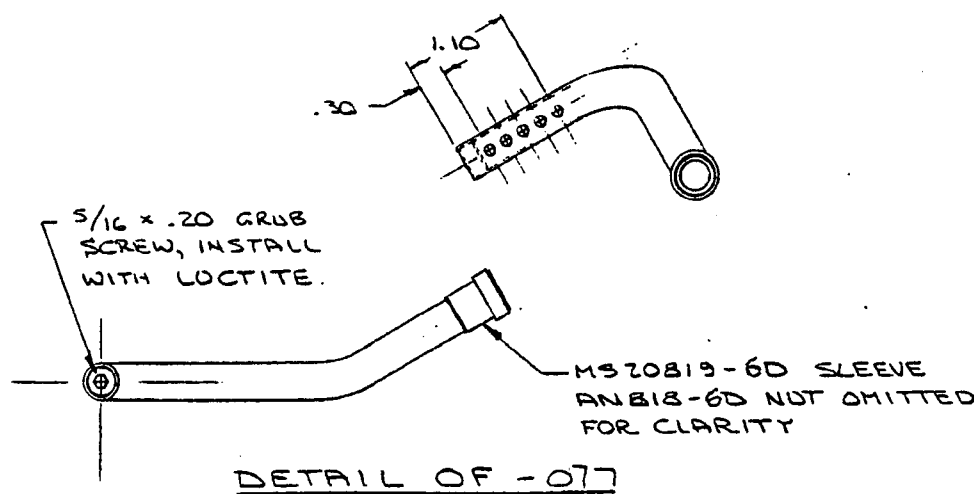
RELEASED  
99.06.09 KE

UNDER REVIEW

06.08.21 CB  
Some flat lengths  
and wrong

Notes:

- (1) USE STRATOFLEX M2650-6 CRINKLE-SOFT HEATSLEEVE.
- (2) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATES.
- (3) TUBES TO BE FLARED 30° TO MATE WITH FITTINGS MADE TO MS33514.
- (4) ENSURE SEAMLESS TUBING IS USED.
- (5) INSTALL HEATSLEEVE OVER ALL TUBES WITH A DESIGNATED LENGTH OF HEATSLEEVE PER THE PARTS LIST.
- (6) 5052 (WW-T-700/4) TUBING MAY BE SUBSTITUTED WHEN 6061 TUBING IS NOT AVAILABLE.
- (7) 0.049 WALL THICKNESS CRES TUBING MAY BE SUBSTITUTED WHEN 0.035 IS NOT AVAILABLE.
- (8) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.



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